

May 24, 2017

Tom Moe
USS Corporation
P.O. Box 417
8771 Park Ridge Dr
Mountain Iron, MN 55768

RE: Project: USS MinnTac NPDES-LINE 3 Wkly
Pace Project No.: 1287690

Dear Tom Moe:

Enclosed are the analytical results for sample(s) received by the laboratory on May 17, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Melisa M Woods
melisa.woods@pacelabs.com
(218)742-1042
Project Manager

Enclosures

cc: Terri Sabetti, NTS



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: USS MinnTac NPDES-LINE 3 Wkly

Pace Project No.: 1287690

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

California Certification #2973

Montana Certificate #CERT0103

California Certification #2973

Alaska Certification UST-107

Alaska Certification UST-107

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

California Certification #2973

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SAMPLE SUMMARY

Project: USS MinnTac NPDES-LINE 3 Wkly

Pace Project No.: 1287690

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1287690001	WS-002 Scrubber make-up	Water	05/17/17 09:00	05/17/17 13:55
1287690002	WS-003 Thickner Overflow	Water	05/17/17 08:50	05/17/17 13:55

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SAMPLE ANALYTE COUNT

Project: USS MinnTac NPDES-LINE 3 Wkly

Pace Project No.: 1287690

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1287690001	WS-002 Scrubber make-up	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V
1287690002	WS-003 Thickner Overflow	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	DMB	1	PASI-V

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ANALYTICAL RESULTS

Project: USS MinnTac NPDES-LINE 3 Wkly

Pace Project No.: 1287690

Sample: WS-002 Scrubber make-up Lab ID: 1287690001 Collected: 05/17/17 09:00 Received: 05/17/17 13:55 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	115	mg/L	5.0	0.91	10	05/22/17 17:07	05/23/17 15:17	7440-70-2	
Magnesium, Dissolved	224	mg/L	5.0	0.68	10	05/22/17 17:07	05/23/17 15:17	7439-95-4	
Total Hardness, Dissolved	1210	mg/L	100	5.0	10	05/22/17 17:07	05/23/17 15:17		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	751	mg/L	20.0	10.0	10		05/22/17 20:43	14808-79-8	

Sample: WS-003 Thickner Overflow Lab ID: 1287690002 Collected: 05/17/17 08:50 Received: 05/17/17 13:55 Matrix: Water									
Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered Analytical Method: EPA 200.7 Preparation Method: EPA 200.7									
Calcium, Dissolved	692	mg/L	5.0	0.91	10	05/22/17 17:07	05/23/17 15:20	7440-70-2	
Magnesium, Dissolved	125	mg/L	5.0	0.68	10	05/22/17 17:07	05/23/17 15:20	7439-95-4	
Total Hardness, Dissolved	2240	mg/L	100	5.0	10	05/22/17 17:07	05/23/17 15:20		
300.0 IC Anions 28 Days Analytical Method: EPA 300.0									
Sulfate	1520	mg/L	40.0	20.0	20		05/22/17 21:06	14808-79-8	

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QUALITY CONTROL DATA

Project: USS MinnTac NPDES-LINE 3 Wkly

Pace Project No.: 1287690

QC Batch: 114410

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 MET Dissolved

Associated Lab Samples: 1287690001, 1287690002

METHOD BLANK: 451301

Matrix: Water

Associated Lab Samples: 1287690001, 1287690002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.091	05/23/17 14:24	
Magnesium, Dissolved	mg/L	ND	0.50	0.068	05/23/17 14:24	

LABORATORY CONTROL SAMPLE: 451302

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	53.0	106	85-115	
Magnesium, Dissolved	mg/L	50	53.3	107	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 451303 451304

Parameter	Units	1287762002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	37.1	50	50	89.6	89.3	105	104	70-130	0	20	
Magnesium, Dissolved	mg/L	261	50	50	316	316	110	112	70-130	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 451305 451306

Parameter	Units	1287691001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	33.6	50	50	83.4	84.5	100	102	70-130	1	20	
Magnesium, Dissolved	mg/L	74.1	50	50	124	124	99	100	70-130	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: USS MinnTac NPDES-LINE 3 Wkly

Pace Project No.: 1287690

QC Batch: 114324

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Associated Lab Samples: 1287690001, 1287690002

METHOD BLANK: 450955

Matrix: Water

Associated Lab Samples: 1287690001, 1287690002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	05/22/17 10:00	

LABORATORY CONTROL SAMPLE: 450956

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	48.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 450957 450958

Parameter	Units	1287762002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	598	500	500	1100	1100	101	101	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 450959 450960

Parameter	Units	1287547004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	ND	50	50	50.8	50.6	99	99	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: USS MinnTac NPDES-LINE 3 Wkly

Pace Project No.: 1287690

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V Pace Analytical Services - Virginia

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: USS MinnTac NPDES-LINE 3 Wkly

Pace Project No.: 1287690

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1287690001	WS-002 Scrubber make-up	EPA 200.7	114410	EPA 200.7	114438
1287690002	WS-003 Thickner Overflow	EPA 200.7	114410	EPA 200.7	114438
1287690001	WS-002 Scrubber make-up	EPA 300.0	114324		
1287690002	WS-003 Thickner Overflow	EPA 300.0	114324		

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CHAIN-OF-CUSTODY / Analytical Record
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant information must be included.

MO#: 1287690

PM: MMW Due Date: 06/01/17

CLIENT: USS CORP

Section A

Required Client Information:

Company: USS Corporation
Address: P O Box 417
Ml Iron, MN 55768
Phone: _____
Fax: _____
Requested Due Date: _____

Section B

Required Project Information:

Report To: Tom Moe
Copy To: _____
Purchase Order #: _____
Project Name: NPDES-LINE 3 Wky
Project #: _____

Section C

Invoice Information:

Attention: _____
Company Name: _____
Address: _____
Pace Quote: _____
Pace Project Manager: heather.zika@pacelabs.com
Pace Profile #: _____

Regulatory Agency

State / Location

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 /, -) Sample Ids must be unique	MATRIX Drinking Water Waste Water Process Water Soil/Solid Oil Wipe Air Other Tissue	CODE DW WW PW SL OL WP AR OT TS	COLLECTED				SAMPLE TEMP AT COLLECTION	Preservatives								Analyses Test	Y/N													Residual Chlorine (Y/N)	LE, LF LF, LE																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
				MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME		DATE	TIME	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH			Na2S2O3	Methanol	Other																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
1	WS-002 Scrubber Make Up			WT	5/17/17	09:00	5/17/17	08:50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

ADDITIONAL COMMENTS

RELINQUISHED BY / AFFILIATION

DATE

TIME

ACCEPTED BY / AFFILIATION

DATE

TIME

SAMPLE CONDITIONS

Paul Prothier

5-17-17 13:55

Paul Prothier

5-17-17 13:55

118

y

n

y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

Paul Prothier

DATE Signed:


5-17-17

TEMP in C

Received on Ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)

	Document Name:	Document Revised: 15Mar2016
	Sample Condition Upon Receipt Form	Page 1 of 1
	Document No.: F-VM-C-001-Rev.10	Issuing Authority: Pace Virginia, Minnesota Quality Office

Sample Condition Upon Receipt

Client Name:

Project #:

WO#: 1287690

PM: MMW

Due Date: 06/01/17

CLIENT: USS CORP

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client
☐ Commercial ☐ Pace ☐ Other: _____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No Seals Intact? ☐ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other: _____ Temp Blank? ☒ Yes ☐ No

Thermometer Used: ☒ 140792808 Type of Ice: ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read °C: 1.5 Cooler Temp Corrected °C: 1.8 Biological Tissue Frozen? ☐ Yes ☐ No ☒ NA
 Temp should be above freezing to 6°C Correction Factor: +0.13 Date and Initials of Person Examining Contents: 5/17/17 MT

Comments:

Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name and Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5. If Fecal: <input type="checkbox"/> <8 hours <input type="checkbox"/> >8, <24 hours <input type="checkbox"/> >24 hours
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
- Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered Volume Received for Dissolved Tests?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
- Includes Date/Time/ID/Analysis Matrix: <u>MT</u>		
All containers needing acid/base preservation will be checked and documented in the pH logbook.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury Container	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

FECAL WAIVER ON FILE Y N

TEMPERATURE WAIVER ON FILE Y N

Project Manager Review:

Date: 5/17/17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)